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EXAMINER

WAI, ERIC CHARLES

ART UNIT	PAPER NUMBER
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2195

NOTIFICATION DATE	DELIVERY MODE
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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/620,835	Applicant(s) CHINNER ET AL.	
	Examiner ERIC C. WAI	Art Unit 2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/29/2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-25 are presented for examination.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 25 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. The following terms are not clearly understood:

- i. Claim 25 line 4 recites, "without using all of the available resources". It is unclear what part of the claim this limitation modifies. Is the step of "detecting" is performed "without using all of the available resources"?
- ii. Claim 25 line 2 recites, "detecting that an enforcement limit has been reached". It is unclear whether this enforcement limit is the same as "restricting" as in claim 1 since both steps are performed "when the number of resources in use is within the first predetermined amount of the maximum number of available resources" (i.e. does restricting occur as a result of detecting the enforcement limit has been reached?)

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Karp et al. (US Pat No. 7,032,222 hereinafter Karp).

6. Regarding claim 1, Karp teaches a method of processing requests to access computing resources (abstract), comprising:

restricting, without totally suspending processing of resource acquisition requests when a number of resources in use is within a first predetermined amount of a maximum number of available resources (Fig 2, col 1 lines 52-67, col 4 lines 9-29, wherein some requests are allowed when they fall below a user's hard limit, but denied if granting the requests would result in exceeding the high watermark, in other words certain requests are allowed to proceed (i.e. restricting without totally suspending) if resource use is between the soft limit and the hard limit, i.e. within a first predetermined amount; col 3 lines 33-43, wherein the hard limit is a resource limit for a single user and

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would inherently be lower than the maximum number of available resources since there are multiple users).

7. Regarding claim 14, it is the computer readable medium claim of claim 1 above.

Therefore, it is rejected for the same reasons as claim 1 above.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2-13, and 15-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karp et al. (US Pat No. 7,032,222) in view of Richardson (US Pat No. 5,748,892).

10. Regarding claim 2, Karp does not teach that the resource acquisition requests include:

local resource acquisition requests generated by at least one local file system for access to local storage and

network resource acquisition requests generated by at least one network file system for access to remote data via a network.

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11. While, Karp does teaches a generalized system for allocating the resources (such as storage) to all the users of the system, Karp does not teach local and networked requests. Richardson teaches a method for controlling data in a networked environment having client (local) and server (network) nodes.

12. It would have been obvious to one of ordinary skill in the art at the time of the invention to include resource acquisition requests being generated by a local file system and a network file system. One would be motivated by the desire to apply Karp's teachings to the managing of storage resources on local and networked environments.

13. Regarding claim 3, Karp further teaches wherein the maximum number of available resources represents the available resources for the network resource acquisition requests and in addition, a local reserved number of the resources are available for the local resource acquisition requests (col 3 lines 3-4), and

wherein said restricting applies an enforcement limit, smaller than the maximum number of available resources by the first predetermined amount, to the network resource acquisition requests (col 3 lines 16-17, wherein a soft limit is applied to each user).

14. Regarding claim 4, Karp teaches wherein each network file system has a soft limit for executing the network resource acquisition requests (col 3 lines 16-17, wherein a soft limit is applied to each user).

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15. However, Karp does not teach holding a first network resource acquisition request in a first file system queue if execution of the first network resource acquisition request would cause the enforcement limit to be exceeded and the soft limit for a first network file system that generated the first network resource acquisition request has been exceeded.

16. It would have been obvious to one of ordinary skill in the art at the time of the invention, to place the network resource acquisition in a file system queue. One would be motivated by the desire to store pending requests that have not yet been granted.

17. Regarding claim 5, Karp teaches does not explicitly teach that said holding of the first resource acquisition request and any subsequently received resource acquisition requests for the first network file system is continued until at least one of: the executing resource acquisition requests for the first network file system are below the soft limit, and the first resource acquisition request has been held on the first file system queue longer than a predetermined time period.

18. Karp does teach the use of a hard limit for each user that enables users to exceed their soft limited under predetermined conditions (col 3 lines 33-35).

19. It would have been obvious to one of ordinary skill in the art at the time of the invention, that the next queued request would be processed once an available resource is free. It also would have been obvious to process a queued request that has been held longer than a predetermined time period. One would have been motivated by the desire

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to increase the efficiency of the system by processing requests if there are available resources as indicated by Karp (col 3 lines 35-38).

20. Regarding claim 6, Karp does not teach that upon completion of execution of each of the resource acquisition requests, initiating execution of a longest held resource acquisition request in a corresponding network filesystem queue if the corresponding network filesystem queue is not empty.

21. It would have been obvious to one of ordinary skill in the art at the time of the invention, that the next queued request would be processed once an available resource is free. One would be motivated by the desire to process the requests in a FIFO manner.

22. Regarding claim 7, Karp teaches flushing the network resource acquisition requests related to a new network resource acquisition request if the maximum number of available resources are in use when the new network resource acquisition request is received (col 1 lines 45-48, wherein new users are locked out when all the resources are already allocated).

23. Regarding claim 8, Karp and Richardson do not teach holding the new network resource acquisition request and any subsequently received network resource acquisition requests in a global wait queue until the number of resources in use is less than the maximum number of available resources.

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24. It would have been obvious to one of ordinary skill in the art at the time of the invention, to utilize a global wait queue. One would be motivated by the desire to keep track of pending requests.

25. Regarding claim 9, Karp and Richardson do not explicitly teach repeating said flushing of the network resource acquisition requests, until the number of resources in use is less than the maximum number of available resources by at least the second predetermined amount.

26. Karp teaches that new requests would be locked out when all the resources are already allocated (col 1 lines 45-48). It would have been obvious to one of ordinary skill in the art at the time of the invention, to repeatedly flush or prohibit new requests from processing if the requisite resources were not available.

27. Regarding claim 10, Karp and Richardson do not teach that upon completion of execution of each of the resource acquisition requests, releasing the new and any subsequently received network resource acquisition requests in the global wait queue, if the number of resources in use is less than the maximum number of available resources by at least the second predetermined amount.

28. It would have been obvious to one of ordinary skill in the art at the time of the invention, that any queued requests would be processed if the required resources were available.

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29. Regarding claim 11, Karp and Richardson do not explicitly teach that said initiating execution of the longest held resource acquisition request in the corresponding network filesystem queue is not performed until the executing resource acquisition requests generated by a corresponding network filesystem are below the soft limit by a third predetermined amount.

30. It would have been obvious to one of ordinary skill in the art at the time of the invention, that the system would only allow the executing of the request if there was some extra capability of the system to handle the request. One would be motivated by the desire to not overload the system.

31. Regarding claim 12, Karp and Richardson do not teach that the computing resources are handles providing access to data storage for the local and network file systems.

32. Karp teaches a generalized method for handling resource requests. It would have been obvious to one of ordinary skill in the art at the time of the invention, to include handles for providing access to data storage for the local and network file systems. One would be motivated by the desire to extend the teachings of Karp.

33. Regarding claim 13, Karp teaches that at least one of the maximum number of available resources, the enforcement limit, the soft limit and the first, second and third predetermined amounts are configurable by a user (col 3 lines 22-23).

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34. Regarding claims 15-24, they are the computer readable medium and system claims of claims 1-13 above. Therefore, they are rejected for the same reasons as claims 1-13 above.

35. Regarding claim 25, Karp teaches detecting that an enforcement limit has been reached when the number of resources in use is within the first predetermined amount of the maximum number of available resources without using all of the available resources (col 4 lines 23-29, wherein the test against the high watermark is checked); and

denying a new network resource acquisition request when the enforcement limit has been reached and at least a second predetermined number of the resource acquisition requests associated with the network filesystem are being processed (col 4 lines 30-36; wherein the request is denied based on the high watermark being exceeded and the resource usage is greater than the soft limit).

36. Karp does not explicitly teach placing a new network resource acquisition request in an execution queue associated with a network filesystem instead of denying the network resource acquisition request. However, it would have been obvious to one of ordinary skill in the art to modify Karp to place the request in a queue. One would be motivated by the desire to store the request until the system can provide the necessary resources for processing.

Response to Arguments

37. Applicant's arguments filed 12/29/2008 have been fully considered but they are not persuasive.

38. Applicant argues on pgs 8-9 of Remarks regarding Claim 1:

“Instead of performing operations based on "current utilization" (as allegedly taught by Karp et al.) or "a number of resources in use" (as recited in claim 1), Karp et al, describes using "the Total Allocation of the Resource To the User that Would Result if the Request is Granted" (Fig. 2, block 100) in comparison with various limits. Even if the term "a number of resources in use" referred to what is used by a single user, there still would be no operations performed on the number of resources in use, because Karp et al. clearly teaches that the number of requested resources is added to the number of resources in use prior to performing the tests. “

39. Examiner disagrees. Karp clearly teaches that the current utilization of the resource for the user is used when performing the test (col 4 lines 4-15, wherein the resource use if the request is granted will be $n_2+n_3+n_1$). Applicant's arguments that “the number of requested resources is added to the number of resources in use prior to performing the tests” is inapposite to what is being claimed. The claims only require that “a number of resources in use” be used for the test. Karp does clearly take into account the number of resources being utilized when making the determination step, wherein n_2+n_3 refers the units currently being utilized. Furthermore, “a number of resources”

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can also refer to the resources that will be used, and not what is currently in use as argued by Applicant.

40. Applicant argues on pg 9 of Remarks regarding Claim 1:

“Furthermore, it is submitted that Karp et al. does not determine when anything is "within a first predetermined amount of a maximum number of available resources" as required by claim 1. Karp et al. describes "a total capacity or capability (T) of the resource" (column 3, lines 3-4) which may be equivalent to "a maximum number of available resources." ... This would constitute "totally suspending ... processing of resource acquisition requests" (claim 1, line 3) and thus, would not meet the limitations recited in claim 1 as amended.”

41. Examiner disagrees. Applicant's arguments are inapposite the cited passages of Karp. Karp teaches that when the resource allocation falls between the soft limit and hard limit (i.e. within a predetermined amount), requests are selectively granted as long as the resource allocation does not exceed the high watermark.

42. Applicant argues on pg 9 of Remarks regarding Claim 1:

“Finally, in the method described in Karp et al., "restricting ... processing of resource acquisition requests" (claim 1, line 3) does not begin when the "Soft Limit [is] Exceeded" in block 102, but rather after the "High Watermark [is] Exceeded" in block 110. Claim 1 recites that "restricting" happens "when a number of resources in use is within a first predetermined amount of a maximum number of available resources"

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(claim 1, lines 3-4, emphasis added) not after a soft limit (determined in some other manner) is exceeded which, as noted above, is what is described by Karp et al."

43. Examiner disagrees. Karp teaches restricting requests when the resource use is between a soft and hard limit. The claim language only requires that requests be restricted when the resources is within a predetermined amount. The claim language does not clearly specify what the predetermined amount is or how it is determined. Therefore, a predetermined amount can be interpreted to mean any set of values (e.g. values between the soft and hard limit) not exceeding the maximum number of available resources. Therefore, Karp's step of restricting requests that fall between the soft and hard limit meet the claim language.

44. Applicant argues on pg 10 of Remarks regarding Claim 1:

"However, as discussed above, a value falling "between the soft and hard limit[s]" would not be "within a first predetermined amount of a maximum number of resources" (claim 1, last line) when the hard limit is less than the maximum number of resources. Rather, to be "within a first predetermined amount of a maximum number of resources" (claim 1, last line, emphasis added), the value would have to exceed some limit that is a "predetermined amount ... [less than] a maximum number of resources." As discussed above, the "hard limit" does not meet this test, because when the hard limit will be exceeded if the request is granted, the request is denied. Claims 1 and 14 have been amended to recite that "restricting" does not include "totally suspending" processing of

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requests; therefore, exceeding the hard limit cannot be the condition that causes the restricting recited in the claims.”

45. Examiner disagrees for the reasons argued previously. Applicant’s argument that “the value would have to exceed some limit that is a “predetermined amount ... [less than] a maximum number of resources”” is not clearly stated in the claim language.

46. Applicant argues on pg 10 of Remarks regarding Claim 1:

“Furthermore, it is submitted that the “soft limit” used in the method described in Karp et al. is not “a predetermined amount ... [less than] a maximum number of resources” because the “soft limit S is a minimum portion of the resource 10 to which each potential user has guaranteed access” (column 3, lines 18-19) ..., no suggestion has been cited or found that it is determined “when a number of resources in use is within a first predetermined amount of a maximum number of available resources” (e.g., claim 1, lines 3-5, emphasis added). No suggestion of doing anything like subtracting a value from the total capacity or capability (T) of the resource to obtain a value that can be compared with current utilization has been cited or found in .Karp et al.”

47. Examiner disagrees. As argued above, it is possible to interpret a predetermined amount as a range of values that fall below the maximum number of available resources. One such interpretation is found in Karp which teaches determining whether the resources usage falls between the soft and hard limit.

Conclusion

48. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

49.

50. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric C. Wai whose telephone number is 571-270-1012. The examiner can normally be reached on Mon-Thurs, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng - Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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